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(19) 日本国特許庁 (JP)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開2001-190596

(P2001-190596A)

(43) 公開日 平成13年7月17日 (2001.7.17)

(51) Int.Cl.  
A 6 1 F 13/551  
13/15  
13/53  
13/49  
13/511

識別記号

F I  
A 6 1 F 13/18  
A 4 1 B 13/02

データコード(参考)  
3 8 3 3 B 0 2 9  
B 4 C 0 0 3  
E  
F  
M

審査請求 未請求 請求項の数 8 O L (全 8 頁) 最終頁に続く

(21) 出願番号 特願2000-575(P2000-575)

(22) 出願日 平成12年1月6日 (2000.1.6)

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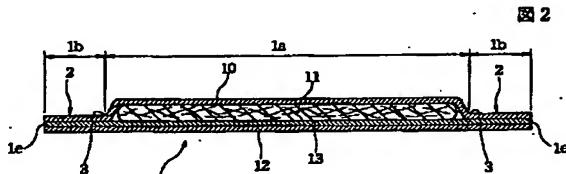
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(54) 【発明の名称】 水解性の吸収性物品

(57) 【要約】

【課題】 従来の水解性の吸収性物品では、各層の形状の保持力と水解性の相反する機能の双方を満足させるのが困難であった。

【解決手段】 水解性の裏面層12と、水解性の表面層10と、裏面層12と表面層10の間に挟まれる水解性の吸収層11とを有する水解性の吸収性物品1である。吸収性物品1の周縁1eから所定幅の領域を外周領域1bで、吸収層11を介在させることなく、水溶性のPVAフィルムを介してヒートシールする。その結果外周領域1bの接合強度を高くして着用時の形状保持力を高くできる。また廃棄時は、多量の水により表面層10と裏面層12とを分離させて各層を剥離させることができる。



## 【特許請求の範囲】

【請求項1】 水解性の裏面層と、水解性で且つ液透過性の表面層と、前記裏面層と表面層の間に挟まれる前記裏面層および表面層よりも平面寸法の小さい水解性の吸収層と、を有する水解性の吸収性物品において、吸収性物品の周縁から所定幅の領域に、前記吸収層が介在せず前記裏面層と表面層とが接合された外周領域が形成されており、前記外周領域では、前記裏面層と前記表面層との間に、熱可塑性の水溶性接着剤が、前記周縁に沿って所定幅寸法の帯状に設けられ、前記外周領域で前記裏面層と前記表面層とが前記熱可塑性の水溶性接着剤によってヒートシールされていることを特徴とする水解性の吸収性物品。

【請求項2】 前記熱可塑性の水溶性接着剤がポリビニールアルコールである請求項1記載の水解性の吸収性物品。

【請求項3】 前記熱可塑性の水溶性接着剤の層が、前記外周領域と、この外周領域の内側の中間領域の双方に、ほぼ全面に設けられている請求項1または2記載の水解性の吸収性物品。

【請求項4】 前記熱可塑性の水溶性接着剤の層が、前記裏面層とは別体のフィルムである請求項3記載の水解性の吸収性物品。

【請求項5】 前記熱可塑性の水溶性接着剤の層が、前記裏面層にラミネートされたフィルムである請求項3記載の水解性の吸収性物品。

【請求項6】 水解性の裏面層と、水解性で且つ液透過性の表面層と、前記裏面層と表面層の間に挟まれる前記裏面層および表面層よりも平面寸法の小さい水解性の吸収層と、を有する水解性の吸収性物品において、吸収性物品の周縁から所定幅の領域に、前記吸収層が介在せず前記裏面層と表面層とが接合された外周領域が形成されており、前記外周領域では、前記裏面層と前記表面層とが、水により剥離可能な接合手段により接合されており、この接合手段の少なくとも一部に欠落部が形成されていることを特徴とする水解性の吸収性物品。

【請求項7】 前記欠落部は、吸収性物品の長手方向の両端部の少なくとも一方に設けられている請求項6記載の水解性の吸収性物品。

【請求項8】 前記接合手段では、前記裏面層と前記表面層とが、熱可塑性の水溶性接着剤を介してヒートシールされている請求項6または7記載の水解性の吸収性物品。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】 本発明は、パンティライナー、生理用ナプキン、尿取りパッド、おむつなどとして用いられる水解性の吸収性物品に関する。

## 【0002】

【従来の技術】 近年、パンティライナーや生理用ナプキン

ン、尿取りパッド、おむつなどの吸収性物品として、水洗トイレに流し捨てることができる吸収性物品が存在する。

【0003】 これら水解性の吸収性物品は、水により容易に分解可能な水解性素材が組み合わされ、これら各水解性素材が結合されることにより構成されている。この水解性の吸収性物品では、水解性素材どうしがある程度強固に接合されていないと、身体に装着した状態で、形状が保持されず、縫れが生じ体にフィットできなくなったり破れが発生する。しかし、各水解性素材が強く接合されすぎていると、水洗トイレに流され浄化槽に落ちたときに、水解性素材どうしが剥離しにくくなる。

【0004】 浄化槽において水解性素材の層間の剥離が迅速に生じないと吸収性物品の内部の空気により吸収性物品が浄化槽内に沈みにくくなる。水解性素材は浄化槽内に沈んで多くの水が与えられたときに分解しやすく、また水中の微生物により生分解するものであるため、吸収性物品が浄化槽内に沈むことができないと、分解がきわめて遅くなる。

【0005】 このように、水解性の吸収性物品では、使用時の保形性を確保できる接合強度と、廃棄時の水解の迅速性という相反する機能が要求される。この要求のために、例えば特表平11-500341号公報には、水解性の表面シートと、水解性の裏面シートとの間に水解性の吸収層が挟まれ、これらが水溶性の接着剤で接着された吸収製品が開示されている。

【0006】 この吸収製品では、その周辺部に吸収層が存在しておらず、この周辺部で表面シートと裏面シートとが水溶性のホットメルト接着剤や水溶性エマルジョン接着剤により接着されている。

## 【0007】

【発明が解決しようとする課題】 しかし、前記特表平11-500341号公報に開示されているものでは、前記周辺部において、水溶性のホットメルト接着剤が螺旋バターンに塗布されたり、またはエマルジョンとして塗布されるものであるため、周辺部での表面シートと裏面シートとの接着力が十分ではない。そのため、身体の着用中に前記周辺部において表面シートと裏面シートとが剥がれ、その結果吸収性物品の形状を保持できず、身体に装着されている状態で縫れや破れが発生しやすくなる。

【0008】 本発明は上記従来の課題を解決するものであり、吸収性物品の外周領域での接合強度を高くして着用中の保形性を高め、水洗トイレに流したときには、構成素材が容易に分離できるようにした水解性の吸収性物品を提供することを目的としている。

## 【0009】

【課題を解決するための手段】 本発明は、水解性の裏面層と、水解性で且つ液透過性の表面層と、前記裏面層と表面層の間に挟まれる前記裏面層および表面層よりも平

面寸法の小さい水解性の吸収層と、を有する水解性の吸収性物品において、吸収性物品の周縁から所定幅の領域に、前記吸収層が介在せず前記裏面層と表面層とが接合された外周領域が形成されており、前記外周領域では、前記裏面層と前記表面層との間に、熱可塑性の水溶性接着剤が、前記周縁に沿って所定幅寸法の帯状に設けられ、前記外周領域で前記裏面層と前記表面層とが前記熱可塑性の水溶性接着剤によってヒートシールされていることを特徴とするものである。

【0010】例えば、前記熱可塑性の水溶性接着剤がポリビニールアルコール(PVA)、さらに好ましくは冷水可溶性のポリビニールアルコール誘導体である。

【0011】本発明では、吸収性物品の外周領域が、所定幅の範囲で、熱可塑性の水溶性接着剤、例えばPVAを用いてヒートシール接合されているため、装着時での形状の保持性が高い。また前記接合は乾燥時の接着強度が高いが、装着時には液体は主に中央領域に与えられ、外周領域に及びにくいため、前記外周領域で表面層と裏面層とが剥がれにくく、よって着用時の形状を保持しやすい。

【0012】また水洗トイレに流されたときには、PVA等の水溶性接着剤が膨潤して解離し、裏面層と表面層とが剥離する。よって各層が分離して浄化槽内などで分解されやすくなる。

【0013】特に、前記外周領域では、裏面層と表面層との間に吸収層が挟まれておらず、裏面層と表面層とが、前記水溶性接着剤で直接に接合されているため、吸収性物品の全体を保形しやすくなり、また廃棄時には多量の水で、前記裏面層と表面層が剥離し、その結果各層が剥離して分離しやすくなる。

【0014】また、前記熱可塑性の水溶性接着剤の層が、前記外周領域と、この外周領域の内側の中間領域の双方に、ほぼ全面に設けられていることが好ましい。例えば、前記熱可塑性の水溶性接着剤の層が、前記裏面層とは別体のフィルムである。好ましくは、前記熱可塑性の水溶性接着剤の層が、前記裏面層にラミネートされたフィルムである。

【0015】このように裏面層の上にほぼ全面的に設けられその上に吸収層が存在する構造であると、前記熱可塑性の水溶性接着剤が液の透過を抑制でき、裏面シートの外側への液体の滲みが生じにくくなる。

【0016】また本発明は、水解性の裏面層と、水解性で且つ液透過性の表面層と、前記裏面層と表面層の間に挟まれる前記裏面層および表面層よりも平面寸法の小さい水解性の吸収層と、を有する水解性の吸収性物品において、吸収性物品の周縁から所定幅の領域に、前記吸収層が介在せず前記裏面層と表面層とが接合された外周領域が形成されており、前記外周領域では、前記裏面層と前記表面層とが、水により剥離可能な接合手段により接合されており、この接合手段の少なくとも一部に欠落部

が形成されていることを特徴とするものである。

【0017】この発明では、外周領域での接合手段により、着用時の形状の保持性を高めることができ、また水洗トイレにながされたときには接合手段の欠落部から内部に多量の水が入り込むため、前記欠落部をきっかけとして前記接合手段を解離しやすくなる。また欠落部から吸収性物品の内部に水が入り、空気が抜けることにより浄化槽に沈みやすくなっている、浄化槽内の分解も容易になる。

10 【0018】特に、前記欠落部は、吸収性物品の長手方向の両端部の少なくとも一方に設けられていることが好ましい。

【0019】前記欠落部を幅方向の両側に設けないことで、身体への装着時での体の動きによって前記幅方向の両側部での表面層と裏面層の剥離が発生するのを防止できるようになる。

【0020】また、前記接合手段では、例えば前記裏面層と前記表面層とが、熱可塑性の水溶性接着剤を介してヒートシールされることにより形成されている。

20 【0021】ただし接合手段に欠落部を設けておくことにより、多量の水が与えられたときにはこの欠落部をきっかけとして接合手段の分離が促進しやすく、また浄化槽に沈みやすくなることで、生分解を促進できるため、前記接合手段はPVAなどの水溶性接着剤を用いたものに限られず、機械的圧着手段や水素結合などによるものであってもよい。

【0022】また、前記各発明では、外周領域以外の中間領域において、表面層と吸収層との間および裏面層と吸収層との間に接着剤を設けなくても形状の保持を保つことができる。ただし、水解を抑制しない範囲で、前記中間領域で、表面層と吸収層との間および裏面層と吸収層との水溶性の接着剤で接着してもよい。

【0023】

【発明の実施の形態】以下、本発明を、図面を参照しながら説明する。図1は、吸収性物品を表側(装着者に對面する側)から見た斜視図、図2は図1に示す吸収性物品のI—I—I線の断面図、図3と図4はラウンドシール部の接合形状を示す吸収性物品の平面図である。なお、吸収性物品の長手方向をY方向とし、Y方向とほぼ直交する幅方向をX方向とする。

【0024】図1及び図2に示す吸収性物品はバンティライナーまたは生理用ナプキンとして使用される本発明の水解性の吸収性物品である。この吸収性物品1は、図2に示すように装着者側に向けられる水解性で且つ液透過性の表面層10と、水解性の裏面層12と、表面層10と裏面層12との間に挟まれる水解性の吸収層11とで構成されている。また、裏面層12と吸収層11との間には、熱可塑性の水溶性接着剤層13が設けられている。

40 50 【0025】前記熱可塑性の水溶性接着剤層13は、水

溶性のPVA、さらに好ましくは冷水可溶性のPVA誘導体であり、裏面層12の上のほぼ全面にわたって設けられている。この水溶性接着剤層13は、前記裏面層12とは別体のフィルム、または前記裏面層12にラミネートされたフィルム、あるいは前記裏面層12のほぼ全面に塗工されたものである。

【0026】吸収性物品1の周縁1eから所定幅間隔をあけた境界線3までの領域である外周領域1bでは、表面層10と裏面層12とのみが積層している。すなわち前記吸収層11の平面形状は、表面層10および裏面層12の平面寸法よりも小さく、前記吸収層11は、前記境界線3よりも内側の中間領域1aにのみ設けられている。

【0027】この外周領域1bにおいて吸収層11を取り囲むようにして加熱加圧処理が施され、表面層10と裏面層12が、前記吸収層11を介在させることなく、前記PVAなどの熱可塑性の水溶性接着剤層13を介してヒートシールされて、ラウンドシール部2が形成されている。

【0028】前記外周領域1bの幅寸法、すなわち周縁1eから境界線3（吸収層11の縁部にほぼ一致する）までの間隔は2～25mmの範囲であることが好ましく、さらに好ましくは8～20mmである。

【0029】前記ラウンドシール部2は、前記外周領域1bの幅の全域に渡って形成されていてもよく、または図3に示すようにラウンドシール部2が、前記外周領域1b内において、外周領域1bの幅寸法よりも小さい幅Wで形成されていてもよい。図3に示す実施の形態では、ラウンドシール部2は、吸収性物品の全周を囲むように、且つ前記幅寸法Wの帯状に形成されている。前記ラウンドシール部2の幅Wは、例えば1～4mm程度である。

【0030】前記幅Wが前記上限より小さいと、吸収性物品1の形状保持力が低下してしまう。また、前記下限より大きいと、中間領域1a内の吸収層の面積が小さくなってしまい吸収性物品1全体での体液の吸収能力が低下し、またラウンドシール部2の幅寸法Wが大きいことにより、吸収性物品1全体の柔軟性が低下し、身体に装着したときにごわつき感を生じる。

【0031】この吸収性物品1では、外周領域1bにおいて、所定幅Wの帯状のラウンドシール部2が形成されていることで、外周領域1bにおいて表面層10と裏面層12とが確実に接合されている。また、所定幅Wの帯状領域でPVAなどの熱可塑性の水溶性接着剤層13を用いたヒートシールを行っているため、前記表面層10と裏面層12との接合強度が高くなっている。よって、身体への装着時において、吸収性物品1の形状の保持力が高く、前記外周領域1bでの表面層10と裏面層12との剥離が生じにくく、よって装着時での槎れや破れが生じにくい。

【0032】ただし、外周領域1bでのヒートシールはPVAなどの水溶性接着剤層13を介したものであるため、水洗トイレに流され浄化槽に至るときに、前記水溶性接着剤層13が水で膨潤して剥離され、外周領域1bにおいて表面層10と裏面層12とが速く剥離する。

【0033】その結果、浄化槽に入ったときに、吸収性物品1は表面層10と裏面層12および吸収層11とに分離されやすくなり、また外周領域1bの層間剥離により吸収性物品1の内部に水が入り込み、内部の空気が抜け出るため、浄化槽内で沈みやすくなり、各層は浄化槽内でさらに分離し且つ生分解される。

【0034】本発明では、外周領域1bでのみ前記熱可塑性の水溶性接着剤層13を介して表面層10と裏面層12とが接合されていることで、吸収性物品1の形状を保持できるようになっている。そのため、中間領域1aでは層間を接着剤で接合することが不要である。むしろ中間領域1aで層間を接着していないことにより、水洗トイレや浄化槽内で外周領域1bのラウンドシール部2において表面層10と裏面層12が剥離することで、表面層10、裏面層12および吸収層11を互いに分離でき、その後の水解及び生分解を迅速に行わせることができる。ただし、中間領域1aにおいて、表面層10と吸収層11との間および／または吸収層11と裏面層12との間が、水溶速度の速い水溶性接着剤により部分的に接合されていてもよい。

【0035】また、この吸収性物品1では、裏面層12の上側の面のほぼ全面に、前記水溶性接着剤層13が形成されているため、この水溶性接着剤層13が体液の防漏層として機能し、吸収層11を透過した体液が水溶性接着剤13の層で吸収されることで裏面層12から裏側へ滲み出るのを防止できる。

【0036】前記のように熱可塑性の水溶性接着剤層13は、水溶性のPVAフィルムであり、さらに好ましくは冷水可溶性のPVA誘導体のフィルムである。このフィルムは裏面層12と別体のものが前記裏面層12の上に重ねて使用され、あるいは前記フィルムが前記裏面層12にラミネートされて一体化されたものが使用される。

【0037】または、前記熱可塑性の水溶性接着剤が裏面層12の上面のほぼ全面に塗工されていてもよい。PVA以外でヒートシールに使用可能な水溶性接着剤は、ポリビニルビロドン、イソブチレンと無水マレイン酸との共重合体のような水溶性高分子をあげができる。

【0038】前記フィルム状の水溶性接着剤や塗工される水溶性接着剤の、前記ラウンドシール部2での坪量は10～30g/m<sup>2</sup>が好ましい。この坪量であると、水洗トイレや浄化槽内で、外周領域1bでのラウンドシール部2での層間の剥離が急速に行えるようになる。また吸収性物品1の形状を保持するのに十分な接合力を得る

ことができる。

【0039】裏面層12は、水洗トイレに流したときにその水流によって、あるいは浄化槽内で容易に分散されるものであり、水分散性繊維を含む水解紙や、水解性不織布等で形成できる。例えば、(1)原料としてパルプを用い、パルプ繊維どうしの水素結合でシート状に形成した水解紙、(2)原料としてパルプやレーヨンなどの水分散性繊維を用い、繊維を結合させる水溶性のバインダーを含有させてシート状に形成した水解紙、(3)水分散性繊維を交絡させてシート状に形成した水解紙、

(4)比較的短い繊維長をもつ水分散性繊維をウォータージェット処理により交絡させた水解性の不織布などをあげることができる。なお、裏面層12の外側(外部装着体に対面する側)には、ポリビニルアルコールや不飽和カルボン酸からなる共重合体などの水溶性樹脂を塗工して、不透液性となるように処理することが可能である。

【0040】吸収層11は、例えば水解紙やパルプや不織布から形成できる。例えば、エアレイドパルプなどを目付50～70g/m<sup>2</sup>程度を用いて形成できる。水解紙で形成する場合、比較的厚みの薄い水解紙を複数枚重ねて形成すると水解性が良好であり好ましい。例えば、目付が10～20g/m<sup>2</sup>である水解紙を4～8枚程度重ねて吸収層11を形成する。また、ポリビニルアルコールなどの水膨潤性樹脂を塗布した水解紙を積層させて形成してもよい。

【0041】表面層10は、例えば水解性のスパンレス不織布である。または、水解性の不織布に複数枚の水解紙を積層させて形成しても良い。この場合、不織布及び水解紙は水素結合やニードリング処理によって一体化させても良い。また、表面層10は排泄液を表面層10の下の吸収層11へと導くため、図1に示すように複数の開孔部が全面的に設けられることが好ましい。

【0042】図4は本発明の第2の実施の形態を示すものである。図4に示す吸収性物品1Aは、各層の素材および水溶性接着剤層13が前記図1、図2および図3に示すものと同じであり、外周領域1bでは、吸収層11を介在させることなく、表面層10と裏面層12とが、PVAフィルムなどの熱可塑性の水溶性接着剤層13を介してヒートシールされたラウンドシール部2a、2aが設けられている。

【0043】このラウンドシール部2a、2aは所定幅Wの帯状に形成されている点で図1ないし図3に示した実施の形態と同じである。ただし、図4に示す吸収性物品1Aでは、ラウンドシール部2aが幅方向(X方向)の両側で且つ長手方向(Y方向)に延びる縁部に形成されており、長手方向(Y方向)の両端部では、その両端部の少なくとも一方で、ラウンドシール部2aの欠落部4が設けられている。図4ではこの欠落部4が長手方向の両端にそれぞれ設けられているが、長手方向の両端の

一方にのみ欠落部が設けられ、他方では連続するラウンドシール部が形成されていてもよい。

【0044】前記欠落部4は、幅方向(X方向)の両側で長手方向(Y方向)に延びる縁部に設けられていてもよい。ただし、幅方向の両側の縁部に欠落部が設けられていると、身体に装着したときに作用するX方向の剪断力に対して、表面層10と裏面層12との接合強度が不十分になる可能性がある。よって図4に示すように、前記欠落部4は長手方向の端部に設けられていることが好みしい。

【0045】この吸収性物品1Aは、幅方向の両側部に所定幅Wの帯状のラウンドシール部2a、2aが形成され、このラウンドシール部2a、2aでヒートシールされているため、装着時に吸収性物品1A全体の形状を保持でき、装着時に作用するX方向の剪断力によって縁が生じたり破れが生じることがない。また水洗トイレに廃棄されたときには、前記欠落部4から吸収性物品内に多量の水が入り込むため、この欠落部4をきっかけとしてラウンドシール部2a、2aで水溶性接着剤層13の解離が促進され、迅速に各層が分離される。

【0046】特に前記欠落部から内部に水が入り、内部の空気が排出されることで、浄化槽内に沈みやすくなる。よって、ラウンドシール部2a、2aの水溶速度が遅いものであっても、浄化槽内に沈んで多量の水が与えた状態で水解しやすくなり、また中間領域1aにおいて表面層10と吸収層11との間、および/または吸収層11と裏面層12との間が水溶性接着剤で接着されているものであっても、浄化槽内に沈んだときに、欠落部4から入り込む多量の水によって表面層10と吸収層11とを分離し、また吸収層11と裏面層12とが分離しやすくなる。

【0047】このように、欠落部4から内部に多量の水が入り込みやすくなるために、前記欠落部4の幅寸法Jは10～40mmが好ましい。なお、この欠落部4は、長手方向の両端部において複数に分離して形成されていてもよい。この場合1つの端部における欠落部の幅の合計が前記Jの範囲であればよい。

【0048】このように、図4に示す実施の形態では、欠落部4から吸収性物品1Aの内部に水を積極的に導く構造であるため、前記のようにラウンドシール部2a、2aの水解速度がやや遅いものであっても、欠落部4をきっかけとしてラウンドシール部2a、2aの分解を促進することができる。よって前記ラウンドシール部2a、2aは、PVAなどの熱可塑性の水溶性接着剤を用いたヒートシールに限られるものではなく、他の水溶性または水膨潤性接着剤により接着されたものや、水素結合または機械的結合による結合手段によりラウンドシール部が形成されたものであってもよい。

【0049】なお本発明においては、好ましくは吸収性物品の本体の裏側、すなわち裏面層12の裏面(外部装

着体に対面する側)には、その全面に粘着部が設けられ、さらに粘着部の粘着力を使用直前まで保護する離型紙が設けられる。この剥離紙は水解性であることが好ましい。さらには、吸収性物品の包装袋なども水解性であることが好ましい。

## 【0050】

【実施例】以下、実施例をあげて本発明を説明するが、本発明はこれに限定されるものではない。

【0051】本発明の実施例として、図3または図4に示すパンティライナーを作成した。このパンティライナーの長手寸法は140mm、幅寸法は55mmである。表面層10は目付4.5g/m<sup>2</sup>の湿式スパンレース不織布、吸収層11は目付14g/m<sup>2</sup>のティッシュ(水解紙)を5枚積層したものを用いた。

【0052】実施例1では、裏面層12として、目付4.5g/m<sup>2</sup>の湿式スパンレース不織布を用い、水溶性接着剤層13として前記裏面層12とは別体の水溶性PVAフィルム(坪量40g/m<sup>2</sup>)を用いた。

【0053】実施例2と3では、裏面層12として目付4.5g/m<sup>2</sup>の湿式スパンレース不織布を用い、水溶性接着剤層13として前記裏面層12に一体にラミネートされた水溶性PVAフィルム(坪量30g/m<sup>2</sup>)を用いた。

【0054】実施例1と2では、図3に示すようにラウンドシール部を全周に形成し、実施例3では、同じくラウンドシール部を形成したが、図4に示すように、吸収性物品の長手方向の両端に幅が20mmの欠落部4をそれぞれ設けた。

【0055】ラウンドシール部2は、パンティライナーの周縁1eから3mmの位置から中間領域側へ幅W=2mmでヒートシールして形成した。このときのヒートシール条件は、120°C、3秒間、3922kPaである。

\* る。

【0056】比較例は、各層が前記実施例と同じであり、且つ水溶性接着剤層13を設けず、前記ヒートシール条件で外周領域1bを加熱加圧処理したものを用いた。

【0057】なお、各実施例と比較例では、中間領域1aで、表面層10と中間層11および中間層11と裏面層12とを接着しなかった。

【0058】得られた実施例と比較例のパンティライナーについて、それぞれ着用テスト、浄化槽テスト、水解性テストの測定を行なった。結果を表1に示す。また、比較例についても実施例同様に試験を行なった。

【0059】(着用テスト) サンプルをパネラー10人に使用してもらう。使用後、サンプルの状態を目視にて観察する。評価方法は次のとおりである。○: 破れなし。×: 破れ発生。

【0060】(浄化槽テスト) サンプルを便器から浄化槽へ流し入れ、その後のサンプルの挙動を目視にて観察した。評価方法は次のとおりである。○: 浄化槽へ入った瞬間に各層がバラバラになる。×: 各層間が分離しない。

【0061】(水解性テスト) JIS P 4501の水解性試験方法に準じて測定した。詳細を述べると、サンプルを縦10cm横10cmに切断したものを、イオン交換水300mlが入った容量300mlのビーカーに投入して、回転子を用いて攪拌を行った。回転数は600rpmである。この時のサンプルの分散状態を経時的に観察し、分散されるまでの時間を測定した。評価方法は次の通りである。○: 100秒以内に水解。×: 水解しない。

## 【0062】

【表1】

表1

	実施例1	実施例2	実施例3	比較例1
(構成)				
表面層	湿式スパンレース	湿式スパンレース	湿式スパンレース	湿式スパンレース
吸収層	水解紙	水解紙	水解紙	水解紙
接着剤層	PVAフィルム			
裏面層	湿式スパンレース	湿式スパンレースとPVA フィルムとのラミネート材	湿式スパンレースとPVA フィルムとのラミネート材	湿式スパンレース
着用テスト	○	○	○	×(破れ)
浄化槽テスト	○	○	○	×(浮き)
水解性	○	○	○	○

## 【0063】

【発明の効果】以上詳述したように、本発明の水解性の吸收性物品では、外周領域において、吸収層を介在させることなく、表面層と裏面層とを水溶性接着剤層を介してヒートシールしたため、外周領域の接合強度を高くでき、着用時の形状の保持力を高くできる。また廃棄時には、多量の水により外周領域から表面層と裏面層を解離でき、短時間で水解できるようになる。

## 【図面の簡単な説明】

【図1】本発明の吸收性物品の斜視図

【図2】図1に示した吸收性物品のI—I—I線の断面図

図

【図3】図1及び図2に示した吸收性物品の平面図

## \*【図4】第2の実施の形態の吸收性物品の平面図

## 【符号の説明】

1 吸收性物品

1a 中間領域

1b 外周領域

1e 周縁部

2, 2a ラウンドシール部

3 境界線

4 ラウンドシール部の欠落部

10 10 表面層

11 吸収層

12 裏面層

\* 13 接着剤層

【図1】

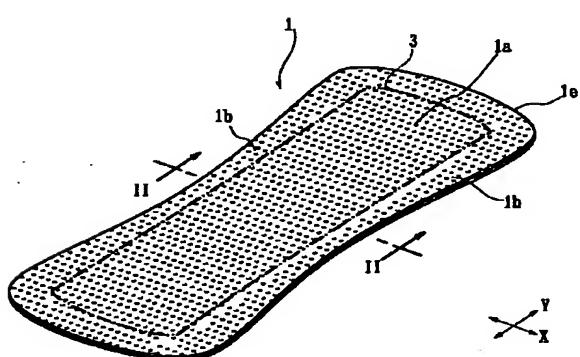


図1

【図2】

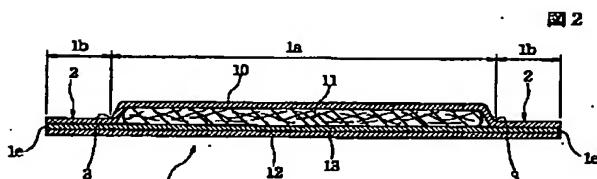


図2

【図3】

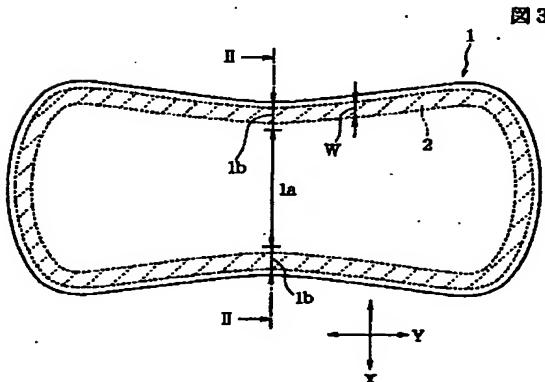


図3

【図4】

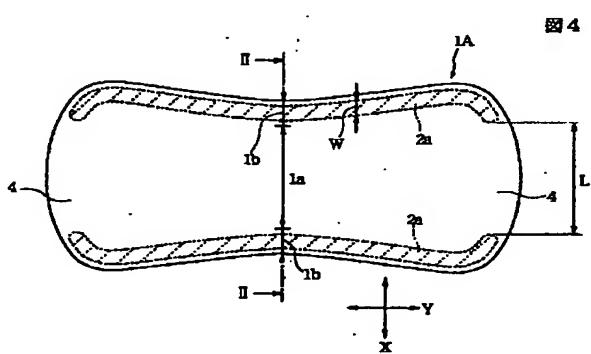


図4

フロントページの続き

(51)Int.Cl.  
A 61 F 13/514

識別記号

F I

マーク (参考)

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F ターム(参考) 3B029 BA05 BA11 BB05 BC06 BD17  
BD21  
4C003 HA04

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**Bibliography**

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(19) [Publication country] Japan Patent Office (JP)  
(12) [Kind of official gazette] Open patent official report (A)  
(11) [Publication No.] JP,2001-190596,A (P2001-190596A)  
(43) [Date of Publication] July 17, Heisei 13 (2001. 7.17)  
(54) [Title of the Invention] Water-soluble absorptivity goods  
(51) [The 7th edition of International Patent Classification]

A61F 13/551

13/15

13/53

13/49

13/511

13/514

[FI]

A61F 13/18 383

A41B 13/02 B

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[Request for Examination] Un-asking.

[The number of claims] 8

[Mode of Application] OL

[Number of Pages] 8

(21) [Application number] Application for patent 2000-575 (P2000-575)

(22) [Filing date] January 6, Heisei 12 (2000. 1.6)

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[Theme code (reference)]

3B029

4C003

[F term (reference)]

3B029 BA05 BA11 BB05 BC06 BD17 BD21

4C003 HA04

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Epitome

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(57) [Abstract]

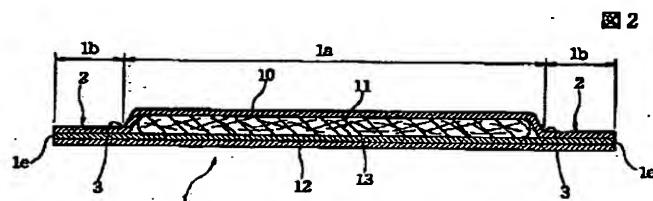
[Technical problem] It was difficult to satisfy the both sides of the function in which water solubility disagrees with the holding power of the configuration of each class on the conventional water-soluble absorptivity goods.

[Means for Solution] They are the water-soluble absorptivity goods 1 which have the water-soluble flesh-side surface layer 12, the water-soluble surface layer 10,

and the flesh-side surface layer 12 and the water-soluble absorption layer 11 pinched between surface layers 10. The field of predetermined width of face is heat sealed through a water-soluble PVA film by periphery field 1b from periphery 1e of the absorptivity goods 1, without making the absorption layer 11 intervene. As a result, bonding strength of periphery field 1b is made high, and configuration holding power at the time of wear can be made high. Moreover, the time of abandonment can make a lot of water able to separate a surface layer 10 and the flesh-side surface layer 12, and can make each class exfoliate.

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**CLAIMS**

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[Claim(s)]

[Claim 1]: A water-soluble flesh-side surface layer The surface layer of liquid permeability that it is [ and ] water solubility A water-soluble absorption layer with a flat-surface dimension smaller than said flesh-side surface layer and surface layer which are pinched between said flesh-side surface layers and surface layers The periphery field where it was water-soluble absorptivity goods equipped with the above, and it was not placed between the fields of predetermined width of face by said absorption layer from the periphery of absorptivity goods, but said flesh-side surface layer and surface layer were joined is formed. In said periphery field between

said flesh-side surface layers and said surface layers Water-soluble thermoplastic adhesives are formed in band-like [ of a predetermined width-of-face dimension ] along said periphery, and it is characterized by heat sealing said flesh-side surface layer and said surface layer by said water-soluble thermoplastic adhesives in said periphery field.

[Claim 2] Water-soluble absorptivity goods according to claim 1 said whose water-soluble thermoplastic adhesives are poly vinyl alcohol.

[Claim 3] Water-soluble absorptivity goods according to claim 1 or 2 with which the layer of said water-soluble thermoplastic adhesives is mostly prepared for the both sides of said periphery field and the staging area inside this periphery field on the whole surface.

[Claim 4] Water-soluble absorptivity goods according to claim 3 whose layer of said water-soluble thermoplastic adhesives of said flesh-side surface layer is the film of another object.

[Claim 5] Water-soluble absorptivity goods according to claim 3 whose layer of said water-soluble thermoplastic adhesives is the film laminated in said flesh-side surface layer.

[Claim 6] A water-soluble flesh-side surface layer The surface layer of liquid permeability that it is [ and ] water solubility A water-soluble absorption layer with a flat-surface dimension smaller than said flesh-side surface layer and surface layer which are pinched between said flesh-side surface layers and surface layers It is water-soluble absorptivity goods equipped with the above, and the periphery field where it was not placed between the fields of predetermined width of face by said absorption layer from the periphery of absorptivity goods, but said flesh-side surface layer and surface layer were joined is formed, said flesh-side surface layer and said surface layer are joined in said periphery field by the junction means which can exfoliate by water, and it is characterized by to form the lack section in a part of this junction means [ at least ].

[Claim 7] Said lack section is water-soluble absorptivity goods according to claim 6 prepared at least in one side of the both ends of the longitudinal direction of absorptivity goods.

[Claim 8] Water-soluble absorptivity goods according to claim 6 or 7 with which said flesh-side surface layer and said surface layer are heat sealed through water-soluble thermoplastic adhesives with said junction means.

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[Translation done.]

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the water-soluble absorptivity goods used as a panties liner, a sanitary napkin, a urine picking pad, a diaper, etc.

[0002]

[Description of the Prior Art] In recent years, the absorptivity goods which can be poured and thrown away into a rinsing toilet as absorptivity goods, such as a panties liner, a sanitary napkin, a urine picking pad, and a diaper, exist.

[0003] The water-soluble material which can be disassembled is together put easily by water, and the absorptivity goods of these water solubility are constituted by combining each [ these ] water-soluble material. In these water-soluble absorptivity goods, if water-soluble materials are not joined somewhat firmly, where the body is equipped, a configuration is not held, but \*\*\*\* arises, it will become impossible to fit the body and a tear will occur. However, when each water-soluble material was joined too much strongly, and it passes in a rinsing toilet and falls to a septic tank, water-soluble materials stop being able to exfoliate easily.

[0004] If exfoliation between the layers of a water-soluble material does not arise quickly in a septic tank, absorptivity goods will stop being able to sink easily in a septic tank due to the air inside absorptivity goods. Since it is what is easy to decompose when a water-soluble material sinks in a septic tank and much water is given, and is biodegraded by the underwater microorganism, decomposition will become very slow if absorptivity goods cannot sink in a septic tank.

[0005] Thus, water-soluble absorptivity goods require the bonding strength which can secure the firmness at the time of use, and the opposite function of the quick nature of the hydration at the time of abandonment. For this demand, a water-soluble absorption layer is pinched between a water-soluble surface sheet and a water-soluble rear-face sheet, and the absorption product which these pasted up with water-soluble adhesives is indicated by for example, the \*\*\*\*\* No. 500341 [ 11 to ] official report.

[0006] With this absorption product, an absorption layer did not exist in that periphery, but the surface sheet and the rear-face sheet have pasted up with water-soluble hot melt adhesive and water-soluble emulsion adhesives at this periphery.

[0007]

[Problem(s) to be Solved by the Invention] However, in said periphery, since it is that to which water-soluble hot melt adhesive is applied to a spiral pattern, or is applied as an emulsion, what is indicated by said \*\*\*\*\* No. 500341 [ 11 to ] official report is not enough as the adhesive strength of the surface sheet in a periphery, and a rear-face sheet. Therefore, in said periphery, a surface sheet and a rear-face sheet separate during wear of the body, and, as a result, the configuration of absorptivity goods cannot be held, but it gets twisted in the condition that the body is equipped, and becomes easy to generate \*\*\*\*\*.

[0008] This invention solves the above-mentioned conventional technical problem, bonding strength in the periphery field of absorptivity goods is made high, and when the firmness under wear is raised and it passes to a rinsing toilet, the configuration material aims at offering the water-soluble absorptivity goods it enabled it to separate easily.

[0009]:

[Means for Solving the Problem] In the water-soluble absorptivity goods with which this invention has a water-soluble flesh-side surface layer, a water-soluble and liquid penetrable surface layer, and a water-soluble absorption layer with a flat-surface dimension smaller than said flesh-side surface layer and surface layer by which it is inserted between said flesh-side surface layers and surface layers The periphery field where it was not placed between the fields of predetermined width of face by said absorption layer from the periphery of absorptivity goods, but said flesh-side surface layer and surface layer were joined is formed. In said periphery field It is characterized by forming water-soluble thermoplastic adhesives in band-like [ of a predetermined width-of-face dimension ] along said periphery, and heat sealing said flesh-side surface layer and said surface layer by said water-soluble thermoplastic adhesives in said periphery field between said flesh-side surface layers and said surface layers.

[0010] for example, said water-soluble thermoplastic adhesives — poly vinyl alcohol (PVA) — it is the poly vinyl alcohol derivative of cold-water fusibility still more preferably.

[0011] Since heat-sealing junction of the periphery field of absorptivity goods is carried out in the range of predetermined width of face in this invention using water-soluble thermoplastic adhesives, for example, PVA, the holdout of the configuration in the time of wearing is high. Moreover, since body fluid is mainly given to a central field at the time of wearing and it is hard to reach a periphery field, a surface layer and a flesh-side surface layer cannot separate easily in said periphery field, and, therefore, it is easy to hold the configuration at the time of wear, although said junction has the high bond strength at the time of desiccation.

[0012] Moreover, when it passes in a rinsing toilet, water-soluble adhesives, such as PVA, swell; it dissociates, and a flesh-side surface layer and a surface layer exfoliate. Therefore, each class dissociates and it becomes that it is easy to be decomposed within a septic tank etc.

[0013] In said periphery field, since an absorption layer is not pinched between a flesh-side surface layer and a surface layer but the flesh-side surface layer and the surface layer are directly joined with said water-soluble adhesives, it becomes easy to carry out the whole absorptivity goods a \*\* form, and said flesh-side surface layer and surface layer exfoliate with a lot of water at the time of abandonment, as a result, each class exfoliates, and it especially becomes easy to dissociate.

[0014] Moreover, it is desirable that the layer of said water-soluble thermoplastic adhesives is mostly prepared for the both sides of said periphery field and the staging area inside this periphery field on the whole surface. For example, the layer of said water-soluble thermoplastic adhesives of said flesh-side surface layer is the film of another object. Preferably, the layer of said water-soluble thermoplastic adhesives is the film laminated in said flesh-side surface layer.

[0015] Thus, said water-soluble thermoplastic adhesives can control transparency of liquid as it is the structure where it is prepared almost extensively on a flesh-side surface layer, and an absorption layer exists on it, and it is hard coming to generate a blot of the body fluid to the outside of a rear-face sheet.

[0016] Moreover, this invention is set on the water-soluble absorptivity goods which have a water-soluble flesh-side surface layer, a water-soluble and liquid penetrable surface layer, and a water-soluble absorption layer with a flat-surface dimension smaller than said flesh-side surface layer and surface layer which are pinched between said flesh-side surface layers and surface layers. The periphery field where it was not placed between the fields of predetermined width of face by said absorption layer from the periphery of absorptivity goods, but said flesh-side surface layer and surface layer were joined is formed. In said periphery field Said flesh-side surface layer and said surface layer are joined by the junction means which can exfoliate by water, and it is characterized by forming the lack section in a part of this junction means [ at least ].

[0017] In this invention, since a lot of water enters the interior from the lack section of a junction means when the holdout of the configuration at the time of wear can be raised and a rinsing toilet \*\*\*\* with the junction means in a periphery field, it becomes easy to dissociate said junction means taking advantage of said lack section. Moreover, water goes into the interior of absorptivity goods from the lack section, when air falls out, it becomes easy to sink in a septic tank, and decomposition within a septic tank also becomes easy.

[0018] As for said especially lack section, it is desirable to be prepared at least in one side of the both ends of the longitudinal direction of absorptivity goods.

[0019] By not preparing said lack section in crosswise both sides, it can prevent now that exfoliation of the surface layer in the both-sides section of said cross direction and a flesh-side surface layer occurs by motion of the body in the time of wearing in the body.

[0020] Moreover, with said junction means, said flesh-side surface layer and said surface layer are formed by heat sealing through water-soluble thermoplastic

adhesives, for example.

[0021] However, since it is easy to promote separation of a junction means taking advantage of this lack section and biodegradation can be promoted by making it easy to sink in a septic tank when a lot of water is given by preparing the lack section in the junction means, said junction means is not restricted to what used water-soluble adhesives, such as PVA, but may be based on a mechanical sticking-by-pressure means, hydrogen bond, etc.

[0022] Moreover, in said each invention, in staging areas other than a periphery field, even if it does not form adhesives between a surface layer and an absorption layer and between a flesh-side surface layer and an absorption layer, maintenance of a configuration can be maintained. However, between a surface layer and absorption layers and a flesh-side surface layer, and an absorption layer may be pasted up with water-soluble adhesives by said staging area in the range which does not control hydration.

[0023]

[Embodiment of the Invention] Hereafter, this invention is explained, referring to a drawing. The sectional view, drawing 3, and drawing 4 of an II-II line of the perspective view as which drawing 1 regarded absorptivity goods from the side front (side which meets a wearing person), and the absorptivity goods which show drawing 2 to drawing 1 are the top view of the absorptivity goods in which the junction configuration of the round seal section is shown. In addition, the longitudinal direction of absorptivity goods is made into the direction of Y, and the cross direction which intersects perpendicularly with the direction of Y mostly is made into the direction of X.

[0024] The absorptivity goods shown in drawing 1 and drawing 2 are the water-soluble absorptivity goods of this invention used as a panties liner or a sanitary napkin. These absorptivity goods 1 consist of water-soluble absorption layers 11 pinched between the water-soluble and liquid penetrable surface layer 10 turned to a wearing person side as shown in drawing 2, the water-soluble flesh-side surface layer 12, and a surface layer 10 and the flesh-side surface layer 12. Moreover, between the flesh-side surface layer 12 and the absorption layer 11, the water-soluble thermoplastic adhesives layer 13 is formed.

[0025] said water-soluble thermoplastic adhesives layer 13 — water-soluble PVA — further — desirable — the PVA derivative of cold-water fusibility — it is — the flesh-side surface layer 12 top — it is mostly prepared over the whole surface. the film which laminated this water-soluble adhesives layer 13 in said flesh-side surface layer 12 in the film or said flesh-side surface layer 12 of another object, or said flesh-side surface layer 12 — coating is mostly carried out to the whole surface.

[0026] In periphery field 1b which opened predetermined width-of-face spacing from periphery 1e of the absorptivity goods 1 and which is a field to a boundary line 3, only the surface layer 10 and the flesh-side surface layer 12 are carrying out the laminating. That is, the flat-surface configuration of said absorption layer 11 is

smaller than the flat-surface dimension of a surface layer 10 and the flesh-side surface layer 12, and said absorption layer 11 is formed only in staging-area 1a inside said boundary line 3.

[0027] As the absorption layer 11 is surrounded in this periphery field 1b, heating pressure treatment is performed, without a surface layer 10 and the flesh-side surface layer 12 making said absorption layer 11 intervene, it heat seals through said water-soluble thermoplastic adhesives layers 13; such as PVA, and the round seal section 2 is formed.

[0028] It is desirable still more desirable that it is the range of 2-25mm, and the width-of-face dimension of said periphery field 1b, i.e., spacing from periphery 1e to a boundary line 3 (it is mostly in agreement with the edge of the absorption layer 11), is 8-20mm.

[0029] As it goes across said round seal section 2 throughout the width of face of said periphery field 1b, and it may be formed or it is shown in drawing 3, the round seal section 2 may be formed in said periphery field 1b by the width of face W smaller than the width-of-face dimension of periphery field 1b. With the gestalt of operation shown in drawing 3, the round seal section 2 is formed in band-like [ of said width-of-face dimension W ] so that the perimeter of absorptivity goods may be surrounded. The width of face W of said round seal section 2 is about 1-4mm.

[0030] If said width of face W is smaller than said upper limit, the configuration holding power of the absorptivity goods 1 will decline. Moreover, the area of the absorption layer in staging-area 1a becomes small, the absorptance of the body fluid in the absorptivity goods 1 whole declines, and if larger than said minimum, according to the width-of-face dimension W of the round seal section 2 being large, the flexibility of the absorptivity goods 1 whole falls, and when the body is equipped, admiration with \*\* will be produced.

[0031] In these absorptivity goods 1, the surface layer 10 and the flesh-side surface layer 12 are certainly joined in periphery field 1b in periphery field 1b by the band-like round seal section 2 of the predetermined width of face W being formed.

Moreover, since heat sealing using the water-soluble thermoplastic adhesives layers 13, such as PVA, is performed in the strip region of the predetermined width of face W, the bonding strength of said surface layer 10 and flesh-side surface layer 12 is high. therefore, the time of wearing in the body — setting — the holding power of the configuration of the absorptivity goods 1 — high — exfoliation with the surface layer 10 in said periphery field 1b, and the flesh-side surface layer 12 — being generated — hard — therefore — the time of wearing — it gets twisted and is hard to produce \*\*\*\*\*.

[0032] However, since heat sealing by periphery field 1b minds the water-soluble adhesives layers 13, such as PVA, when passing in a rinsing toilet and resulting in a septic tank, said water-soluble adhesives layer 13 swells with water, and exfoliates, and a surface layer 10 and the flesh-side surface layer 12 exfoliate quickly in periphery field 1b.

[0033] Consequently, when it goes into a septic tank, in order that internal air may fall out and come out, the absorptivity goods 1 become that it is easy to separate into a surface layer 10, the flesh-side surface layer 12, and the absorption layer 11, and water enters the interior of the absorptivity goods 1 by interlaminar peeling of periphery field 1b, it becomes easy to sink within a septic tank, and within a septic tank, it dissociates further and biodegradation of each class is carried out.

[0034] By this invention, the configuration of the absorptivity goods 1 can be held now by the surface layer 10 and the flesh-side surface layer 12 being joined through said water-soluble thermoplastic adhesives layer 13 only by periphery field 1b. Therefore, in staging-area 1a, it is unnecessary to join between layers with adhesives. A surface layer 10, the flesh-side surface layer 12, and the absorption layer 11 of each other can be separated, and subsequent hydration and biodegradation can be made to perform quickly by having not pasted up between layers by staging-area 1a rather, because a surface layer 10 and the flesh-side surface layer 12 exfoliate in the round seal section 2 of periphery field 1b within a rinsing toilet or a septic tank. However, in staging-area 1a, between a surface layer 10 and the absorption layers 11 and/or between the absorption layer 11 and the flesh-side surface layers 12 may be partially joined by water-soluble adhesives with a quick aqueous rate.

[0035] Moreover, in these absorptivity goods 1, mostly, since [ of the field of the flesh-side surface layer 12 top ] said water-soluble adhesives layer 13 is formed in the whole surface, this water-soluble adhesives layer 13 functions as a leak prevent layer of body fluid, and it can prevent oozing from the flesh-side surface layer 12 to a background by the body fluid which penetrated the absorption layer 11 being absorbed in the layer of the water-soluble adhesives 13.

[0036] As mentioned above, the water-soluble thermoplastic adhesives layer 13 is a water-soluble PVA film, and is the film of the PVA derivative of cold-water fusibility, still more preferably. What the thing of the flesh-side surface layer 12 and another object was used in piles on said flesh-side surface layer 12, or said film laminated this film in said flesh-side surface layer 12, and was unified is used.

[0037] or said water-soluble thermoplastic adhesives — the top face of the flesh-side surface layer 12 — coating may be mostly carried out to the whole surface. Water-soluble usable adhesives can raise a water soluble polymer like the copolymer of a polyvinyl pyrrolidone, an isobutylene, and a maleic anhydride except PVA to heat sealing.

[0038] The basis weight in said round seal section 2 of the water-soluble adhesives of the shape of said film or the water-soluble adhesives by which coating is carried out has desirable 10 – 30 g/m<sup>2</sup>. Exfoliation between the layers in the round seal section 2 in periphery field 1b can be quickly performed now within a rinsing toilet or a septic tank as it is this basis weight. Moreover, sufficient junction force to hold the configuration of the absorptivity goods 1 can be acquired.

[0039] When it passes to a rinsing toilet, it distributes easily the stream or within a

septic tank, and the flesh-side surface layer 12 can be formed with the hydration paper containing water-dispersion fiber, a water-soluble nonwoven fabric, etc. For example, the hydration paper formed in the shape of a sheet by the hydrogen bond of pulp fiber, using pulp as (1) raw material, (2) Hydration paper which was made to contain the water-soluble binder which combines fiber, using water-dispersion fiber, such as pulp and rayon, as a raw material, and was formed in the shape of a sheet, (3) — the hydration paper which was made to carry out the confounding of the water-dispersion fiber, and was formed in the shape of a sheet, and (4) — the water-soluble nonwoven fabric to which the confounding of the water-dispersion fiber with comparatively short fiber length was carried out by water jet processing can be raised. In addition, it is possible to carry out coating of the water soluble resin, such as a copolymer which consists of polyvinyl alcohol or unsaturated carboxylic acid, to the outside (side which meets an external wearing object) of the flesh-side surface layer 12, and to process so that it may become non-liquid permeability:

[0040] The absorption layer 11 can be formed from for example, hydration paper, pulp, or a nonwoven fabric. For example, air RAID pulp etc. can be formed using eyes 50 — about two 70 g/m. When forming in hydration paper, and two or more sheets of hydration papers with comparatively thin thickness are formed in piles, water solubility is good and desirable. For example, eyes form the absorption layer 11 for about 4-8 sheets of hydration papers which are 10 — 20 g/m<sup>2</sup> in piles. Moreover, the laminating of the hydration paper which applied water bloating tendency resin, such as polyvinyl alcohol, may be carried out, and it may be formed.

[0041] A surface layer 10 is a water-soluble span ball-race nonwoven fabric. Or a water-soluble nonwoven fabric may be made to carry out the laminating of two or more sheets of hydration papers, and they may be formed in it. In this case, a nonwoven fabric and hydration paper may be made to unify by hydrogen bond or needling processing. Moreover, as for a surface layer 10, it is desirable that two or more apertures are extensively prepared as shown in drawing 1 in order to lead elimination liquid to the absorption layer 11 under a surface layer 10.

[0042] Drawing 4 shows the gestalt of operation of the 2nd of this invention. The material and the water-soluble adhesives layer 13 of each class of absorptivity goods 1A shown in drawing 4 are the same as that of what is shown in said drawing 1, drawing 2, and drawing 3, and in periphery field 1b, the round seal sections 2a and 2a by which the surface layer 10 and the flesh-side surface layer 12 were heat sealed through the water-soluble thermoplastic adhesives layers 13, such as a PVA film, are formed, without making the absorption layer 11 intervene.

[0043] These round seal sections 2a and 2a are the same as the gestalt of operation shown in drawing 1 thru/or drawing 3 with the point currently formed in band-like [ of the predetermined width of face W ]. However, by absorptivity goods 1A shown in drawing 4, it is formed in the edge which are the both sides whose round seal section 2a is the cross direction (the direction of X), and extends in a longitudinal

direction (the direction of Y), and the lack section 4 of round seal section 2a is formed at least by one side of the both ends at the both ends of a longitudinal direction (the direction of Y). Although this lack section 4 is formed in the both ends of a longitudinal direction in drawing 4, respectively, the lack section may be prepared only in one side of the both ends of a longitudinal direction, and the round seal section which continues on the other hand may be formed.

[0044] Said lack section 4 may be formed in the edge which extends in a longitudinal direction (the direction of Y) on crosswise (the direction of X) both sides. However, if the lack section is prepared in the edge of crosswise both sides, the bonding strength of a surface layer 10 and the flesh-side surface layer 12 may become inadequate to the shearing force of the direction of X which acts when the body is equipped. Therefore, as shown in drawing 4, as for said lack section 4, being prepared in the edge of a longitudinal direction is desirable.

[0045] Since the band-like round seal sections 2a and 2a of the predetermined width of face W are formed in the crosswise both-sides section and it heat seals in these round seal sections 2a and 2a, this absorptivity goods 1A can hold the configuration of the whole absorptivity goods 1A at the time of wearing, \*\*\*\* does not arise according to the shearing force of the direction of X which acts at the time of wearing, or a tear does not produce it. Moreover, since a lot of water enters in absorptivity goods from said lack section 4 when discarded by the rinsing toilet, dissociation of the water-soluble adhesives layer 13 is promoted in the round seal sections 2a and 2a taking advantage of this lack section 4, and each class is separated quickly.

[0046] Water goes into the interior from said lack section, and it especially becomes easy to sink in a septic tank by internal air being discharged. Therefore, even if the aqueous rate of the round seal sections 2a and 2a is slow Even if it becomes easy to carry out hydration after it sank in the septic tank and a lot of water has given, and between a surface layer 10 and the absorption layers 11 and/or between the absorption layer 11 and the flesh-side surface layers 12 have pasted up with water-soluble adhesives in staging-area 1a When it sinks in a septic tank, a lot of water which enters from the lack section 4 separates a surface layer 10 and the absorption layer 11, and it becomes easy to separate the absorption layer 11 and the flesh-side surface layer 12.

[0047] Thus, in order that a lot of water may make it easy to enter the interior from the lack section 4, the width-of-face dimension L of said lack section 4 has 10-40: desirably. In addition, this lack section 4 may be separated and formed in plurality in the both ends of a longitudinal direction. In this case, the sum total of the width of face of the lack section in one edge should just be the range of said L.

[0048] Thus, with the gestalt of operation shown in drawing 4, since it is the structure of leading water to the interior of absorptivity goods 1A positively from the lack section 4, even if the hydration rate of the round seal sections 2a and 2a is a little slow as mentioned above, decomposition of the round seal sections 2a and 2a

can be promoted taking advantage of the lack section 4. Therefore, said round seal sections 2a and 2a are not restricted to heat sealing which used water-soluble thermoplastic adhesives, such as PVA, and the round seal section may be formed of what was pasted up with other water solubility or water bloating tendency adhesives, and the coupling means by hydrogen bond or mechanical association.

[0049] In addition, in this invention, preferably, the adhesion section is prepared in the background of the body of absorptivity goods, i.e., the rear face of the flesh-side surface layer 12, (side which meets an external wearing object) all over the, and the release paper which protects the adhesion of the adhesion section further just before use is formed in it. As for this releasing paper, it is desirable that it is water solubility. Furthermore, as for the package bag of absorptivity goods etc., it is desirable that it is water solubility.

[0050]

[Example] Although an example is given and this invention is explained hereafter, this invention is not limited to this.

[0051] As an example of this invention, the panties liner shown in drawing 3 or drawing 4 was created. The longitudinal dimension of this panties liner is 140mm, and a width-of-face dimension is 55mm. The surface layer 10 used that to which the wet span ball-race nonwoven fabric of eyes 45 g/m<sup>2</sup> and the absorption layer 11 carried out the five-sheet laminating of the tissue (hydration paper) of eyes 14 g/m<sup>2</sup>.

[0052] In the example 1, the water-soluble PVA film (basis-weight 40 g/m<sup>2</sup>) of another object was used in said flesh-side surface layer 12 as a water-soluble adhesives layer 13, using the wet span ball-race nonwoven fabric of eyes 45 g/m<sup>2</sup> as a flesh-side surface layer 12.

[0053] In the examples 2 and 3, the water-soluble PVA film (the basis weight of 30g/m<sup>2</sup>) laminated in said flesh-side surface layer 12 as a water-soluble adhesives layer 13 at one was used, using the wet span ball-race nonwoven fabric of eyes 45 g/m<sup>2</sup> as a flesh-side surface layer 12.

[0054] Although the round seal section was formed in the perimeter as shown in drawing 3, and the round seal section was similarly formed in the example 3 in examples 1 and 2, as shown in drawing 4, the lack section 4 whose width of face L is 20mm was formed in the both ends of the longitudinal direction of absorptivity goods, respectively.

[0055] The round seal section 2 was heat sealed from periphery 1e of a panties liner by width of face of W= 2mm from the location of 3mm to the staging-area side, and was formed. The heat-sealing conditions at this time are 3922kPa(s) for 120 degrees C and 3 seconds.

[0056] Each class of the example of a comparison is the same as that of said example, the water-soluble adhesives layer 13 was not formed, but what carried out heating pressure treatment of the periphery field 1b on said heat-sealing conditions was used.

[0057] In addition, in each example and the example of a comparison, a surface layer

10, an interlayer 11 and an interlayer 11, and the flesh-side surface layer 12 were not pasted up by staging-area 1a.

[0058] About the obtained panties liner of an example and the example of a comparison, measurement of a wear test, a septic tank test, and a water-soluble test was performed, respectively. A result is shown in Table 1. Moreover, it examined like [ example / of a comparison ] the example.

[0059] (Wear test) I have ten panelists use a sample. The condition of a sample is visually observed after use. The evaluation approach is as follows. O : with no tear. x: Tear generating.

[0060] (Septic tank test) The sample was passed from the toilet bowl to the septic tank, and the behavior of a subsequent sample was observed visually. The evaluation approach is as follows. O : each class becomes scattering at the moment of going into a septic tank. x: Between each class does not dissociate.

[0061] (Water-soluble test) JIS P It measured according to the water-soluble test method of 4501. When detail was given, what cut the sample to 10cm by 10cm was supplied to the beaker which is the capacity of 300ml containing 300ml of ion exchange water, and it agitated using the rotator. A rotational frequency is 600rpm. The distributed condition of the sample at this time was observed with time, and time amount until it distributes was measured. The evaluation approach is as follows. O : it is hydration within 100 seconds. x: Don't carry out hydration.

[0062]

[Table 1]

表1

	実施例1	実施例2	実施例3	比較例1
(構成)				
表面層	湿式スパンレース	湿式スパンレース	湿式スパンレース	湿式スパンレース
吸収層	水解紙	水解紙	水解紙	水解紙
接着剤層	PVAフィルム			
裏面層	湿式スパンレース	湿式スパンレースとPVA フィルムとのテネット材	湿式スパンレースとPVA フィルムとのテネット材	湿式スパンレース
着用テスト	○	○	○	×(破れ)
浄化槽テスト	○	○	○	×(浮き)
水解性	○	○	○	○

[0063]

**[Effect of the Invention]** In the water-soluble absorptivity goods of this invention, as explained in full detail above, since the surface layer and the flesh-side surface layer were heat sealed through the water-soluble adhesives layer, without making an absorption layer intervene, bonding strength of a periphery field can be made high and holding power of the configuration at the time of wear can be made high in a periphery field. Moreover, a surface layer and a flesh-side surface layer can be dissociated from a periphery field with a lot of water, and it comes to be able to carry out hydration for a short time at the time of abandonment.

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[Translation done.]

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**DESCRIPTION OF DRAWINGS**

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**[Brief Description of the Drawings]**

**[Drawing 1]** The perspective view of the absorptivity goods of this invention

**[Drawing 2]** The sectional view of the II-II line of the absorptivity goods shown in drawing 1

**[Drawing 3]** The top view of the absorptivity goods shown in drawing 1 and drawing 2

**[Drawing 4]** The top view of the absorptivity goods of the gestalt of the 2nd operation

**[Description of Notations]**

1 Absorptivity Goods

1a Staging area.

1b Periphery field

1e Periphery section

2 2a Round seal section

3 Boundary Line

4 Lack Section of Round Seal Section

10 Surface Layer

11 Absorption Layer

12 Flesh-Side Surface Layer  
13 Adhesives Layer

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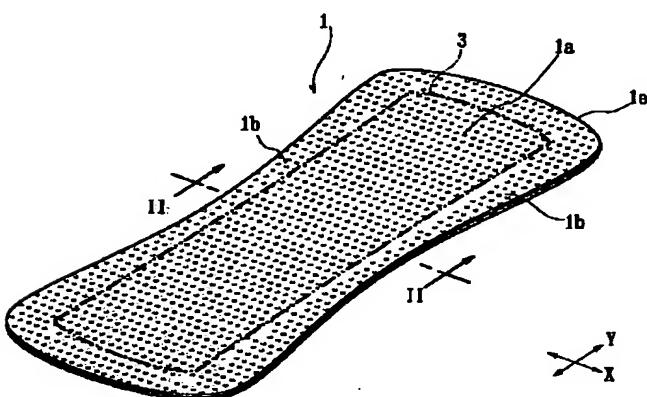
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**DRAWINGS**

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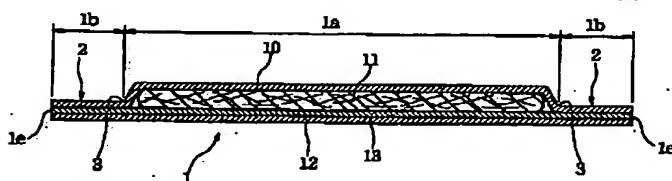
[Drawing 1]

図 1

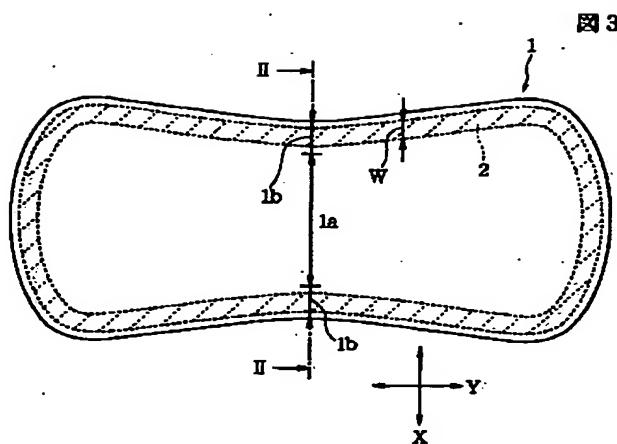


[Drawing 2]

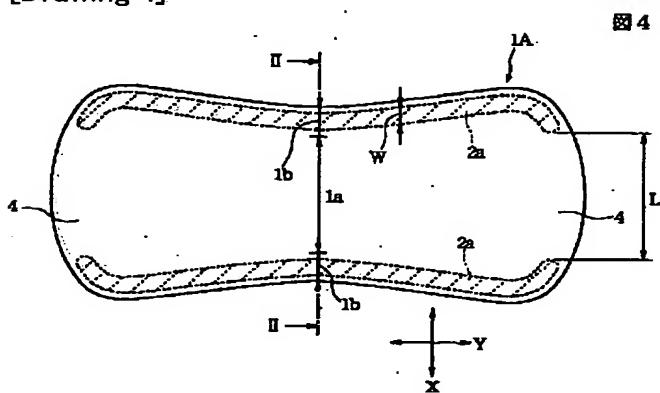
図 2



[Drawing 3]



[Drawing 4]



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[Translation done.]